dense that one could scarcely see the distance of three lengths of the vessel." This violent snow-storm at sea, connected with Storm-centre No. VI., is traced by other marine reports 70 miles south of Cape Henry on the 16th, 17th and 18th.

No. VII was of short duration and extent, so far as it is in the power of the office to trace it. Being, also, a feeble depression, the deficiency of pressure was restored on the night of the 19th, and the phenomenon disappears within the field of weather-observations. Its track does not appear to be more than 400 miles long.

No. VIII. This was at first a feeble disturbance, manifested in southern Louisiana, thence slowly moving northeastward to central Alabama; thence, yet more slowly, changing its course to southeast, and passing over western and northern Florida, reaching the Gulf stream, by very tardy advances, on the afternoon of the 23d near Fernandina; after which, its progress was steadily and rapidly maintained along the western margin of the great ocean-current, until, on the 25th, it vanished in the direction of Newfoundland. On Saturday afternoon, while this storm-centre was passing off Cape Henry, vessels on the Chesapeake Bay experienced one of the most severe hurricanes of the winter. The progressive velocity of the gale when off the coast exceeded at times 35 miles per hour, while its cyclonic winds occasionally reached 40 miles an hour. The rain on the seaboard, however, was not very heavy, as the centre kept well out to sea.

No. IX, commencing in the Southwest on the 26th, passed over Tennessee, North Carolina and Virginia, and was attended with heavy rains along its pathway. Otherwise it was not worthy of special note.

No. X. This was, perhaps, the most noteworthy storm of the month. Its course lay due northeast from Indian Territory to the St. Lawrence valley. Its progress was very rapid, occasionally attaining or exceeding a velocity of 42 miles per hour after crossing the Mississippi river; and the cyclonic winds on the Lakes were reported as high as 60 miles an hour. The barometric gradients there were steep, and the barometer fell on Lake Erie to 29.24 inches and, probably, lower. It was accompanied by considerable, but not very heavy or protracted, rains and snows. Winds of from 40 to 50 miles velocity per hour were frequent on Lake Erie. At Erie, Pa., buildings were unroofed and local damage was reported. Thunder and zigzag lightning followed in the rear of the storm after its passage of Lake Erie.

ATMOSPHERIC TEMPERATURE.

The collective observations of the month's temperature appear on Chart No. II, graphically by the isothermal lines in red, and more accurately by the table in the lower left-hand corner.

(1) *General range.* It is a most remarkable fact, as numerically shown by the table on Chart II, that, in every district of the United States east of the Rocky Mountains, the April temperature has been extraordinarily low. This unusual cold is most noticeable in the Middle and South Atlantic States, New England, the Lower Lake region and the Upper Mississippi valley. The only exception to this abnormal distribution of temperature is on the Pacific coast, where the range is 2°.6′ above the average of many years. The temperature for the whole northern frontier, from Maine to Dakota, very nearly averages that of freezing to the end of April. The isotherms in the country

west of the Mississippi valley, notwithstanding the season, have scarcely any deflection northward. This fact shows the protractedness of the late winter. A private observer at New Bedford, Mass., gives the following as a record of the coldest winters since 1812:

	1874–5.	1871–2.	1855–6.	1835–6.
December	31.°20 F.	28.°40 F.	34.°20 F.	26.°40 F.
January	21. 60	25. 90	20. 95	28. 25
February	21. 73	28. 25	22. 64	22. 25
March	39. 17	27. 20	29. 10	32. 30
Average for January and February	21. 67	27. 08	21. 80	25. 25
Average for December, January and February	24. 84	27. 52	25. 93	25. 63
Average for Dec., Jan'y, Feb'y and March	26. 18	27. 44	26. 72	27. 30

(2) *Destructive frosts:* The lateness of the spring, the prevalence of severe frosts and the injury to vegetation have been among the most obvious features of this month's weather. A record of April frosts, kept in Florence, Alabama, from 1849 to 1853, and from 1853 to the present year in Knoxville, Tennessee, gives the following data: April 16, 1849, at Florence, Alabama, "severe frosts, and vegetation supposed to be all killed." April 16, 1850, "disastrous frosts, which killed vegetation, and even young oak trees, from Tennessee to the Gulf." April 19, 1852, snow in the morning. April 17, 1870, at Knoxville, cold, cloudy day, with snow. April 22d and 23d, 1871, "frost at night."

April 23, 1875, frost was reported at Knoxville. At Norfolk, on the 17th, there was a heavy frost, which was reported as very disastrous to peas, strawberries and peaches. On the 18th and 19th, another heavy frost (Thermometer 27°F.) fell at Norfolk, nearly destroying the pears, plums and cherries; also ruining the early vegetables and strawberries.

At Nashville, Tennessee, on the 17th, the thermometer fell to 25.°5 F., forming ice about one-eighth of an inch thick, seriously injuring vegetation and killing many fruit trees. There was frost at Leavenworth, Kansas, on the 16th, and snow at Lynchburg, Virginia, on the 17th, and freezing weather nearly all day at the latter place on the 18th, causing great lo s of all varieties of early fruits and early wheat. Frost occurred at Wytheville, Virginia, on the 22d, 23d and 24th; at Charleston, South Carolina, on the 19th, (heavy); at Aiken, South Carolina, on the 17th and 18th; at Mobile, on the 3d; heavy frost at Savannah, Georgia, on the 18th and 19th, with ice nearly half an inch thick on tranquil pools in the country. Light frost was deposited at Augusta, Georgia, and Wilsonville, Alabama, on the 17th and 19th. On the interior lakes of New York, and in the Adirondacks, it is reported ice remained two to three feet thick as late as April 15th. Frost was also reported at Brookhaven, Mississippi, on the 24th, (latest known); light frost on the 18th at Mayport, Florida, and on the 24th, at Troy, Alabama; at St. Marks, Florida, on the 18th, and on the 19th, at Wellborn, Florida.

(3) *Temperature of the soil.* At Fallston, Maryland, water-pipes, three feet underground, frozen in the winter, were first sufficiently thawed to admit flow of water on the 3d of April. At Nichols, New York, the ground was not free from frost till the last of the month. At Kenton, Ohio, and Hector, Schuyler county, New York, frost disappeared from the soil, not till the 10th. At Fall River, Massachusetts, water-pipes frozen February 12th, remained so till after the 20th of April.